

U.S.S.N. 10/665,793

Filed: September 19, 2003

AMENDMENT AND RESPONSE TO OFFICE ACTION

Amendment

In the Claims

1. (Previously presented) A brachytherapy strand or seed for implantation into a subject comprising
 - (a) a non-radionuclide imaging marker, and
 - (b) a biocompatible carrier,
wherein the strand or seed is elastic, and has a size and shape suitable for passing through the bore of a needle having an interior diameter of less than about 2.7 millimeters (10 gauge).
2. (Previously presented) The strand or seed of claim 1 formed of a synthetic polymer.
3. (Previously presented) The strand or seed of claim 1 formed of an inorganic material.
4. (Previously presented) The strand or seed of claim 1 formed of a natural material selected from the group consisting of proteins, peptides, polysaccharides, lipids, and combinations thereof.
5. (Previously presented) The strand of claim 1 formed of a shape memory material.
6. (Previously presented) The strand or seed of claim 1 further comprising a therapeutic, prophylactic or diagnostic agent.
7. (Previously presented) The strand or seed of claim 1 further comprising conduits, cavities, microbubbles, or pores along the length of the strand.
8. (Previously presented) The strand or seed of claim 7 further comprising a portal for external access using a needle or other introducer instrument for purposes of filling the conduits,

U.S.S.N. 10/665,793

Filed: September 19, 2003

AMENDMENT AND RESPONSE TO OFFICE ACTION

cavities, microbubbles, or pores with therapeutic, prophylactic or diagnostic agents after implantation.

9. (Previously presented) The strand or seed of claim 1 further comprising a radioactive agent.

10. (Previously presented) The strand or seed of claim 1 wherein the imaging marker is detectable by X-ray, fluorescence, infrared, ultrasound, magnetic detection, or MRI.

11. (Previously presented) The strand or seed of claim 1, wherein the size and shape is suitable for passing through the bore of a needle having an interior diameter of less than about 1.4 millimeters (15 gauge).

12. (Previously presented) The strand or seed of claim 1, wherein the seed is shaped into a cylinder having a diameter of between about 0.5 to 3 millimeters and a length of 4 to 500 millimeters.

13. (Original) The strand of claim 1, wherein the strand comprises seeds strung on or formed as a strand of between about 0.5 and 3 mm diameter and a length of between one and 50 cm.

14. (Previously presented) The strand or seed of claim 1, wherein the carrier is biodegradable.

15. (Previously presented) The strand or seed of claim 1 further comprising a material selected from the group consisting of ferromagnetic microspheres, oxygen, hemoglobin, synthetic hemoglobin-like substances and drugs for enhancing oxygen perfusion.

U.S.S.N. 10/665,793

Filed: September 19, 2003

AMENDMENT AND RESPONSE TO OFFICE ACTION

16. (Currently amended) The strand or seed of claim 1, ~~further comprising a plurality of~~ seeds.

17. (Previously presented) The strand or seed of claim 9 further comprising a means of tracing the radioactive agent.

18. (Previously presented) The strand or seed of claim 1 further comprising a radiosensitizing agent.

19. (Previously presented) The strand or seed of claim 1 wherein the imaging marker is a radiopaque marker comprising a substance selected from the group consisting of platinum, iridium, rhenium, gold, tantalum, bismuth, indium, tungsten, silver, and radiopaque polymers.

20. (Previously presented) The strand or seed of claim 1 further comprising hairs coating the external surface of the brachytherapy strand or seed for enhancement of adhesive potential.

Claim 21. (Canceled)

22. (Previously presented) The strand or seed of claim 3 wherein the inorganic material is selected from the group consisting of silicon, coral, fullerene, bioceramic, and hydroxyapatite.

23. (Previously presented) The strand or seed of claim 1 wherein the seed is formed of a composite of an inorganic material and a polymer.

24. (Currently amended) A method of making a brachytherapy strand or seed for implantation into a subject comprising mixing a biocompatible elastic carrier with a non-radioactive imaging agent to form ~~a~~ an elastic brachytherapy strand or seed.

U.S.S.N. 10/665,793

Filed: September 19, 2003

AMENDMENT AND RESPONSE TO OFFICE ACTION

25. (Previously presented) A method for administering a therapeutically active component to a target tissue in a subject, the method comprising implanting a brachytherapy strand or seed comprising

(a) a non-radionuclide imaging marker, and

(b) a biocompatible carrier,

wherein the strand or seed is elastic, and has a size and shape suitable for passing through the bore of a needle having an interior diameter of less than about 2.7 millimeters (10 gauge).

26. (Previously presented) The method of claim 25, wherein the target tissue is a diseased tissue selected from the group consisting of prostate, breast and tongue.

27. (Previously presented) The strand of claim 16, wherein the seeds are formed of a material selected from the group consisting of non-polymeric or inorganic materials and polymers.

28. (Previously presented) The strand or seed of claim 1, further comprising polymeric anchoring structures.

29. (Previously presented) The strand or seed of claim 28, wherein the anchoring structures are selected from the group consisting of ridges, bumps, bristles, rings, hooks, and pop-up wings.

30. (Previously presented) The strand or seed of claim 6, comprising one or more areas comprising a therapeutic, prophylactic or diagnostic agent and one or more areas comprising spacers.

U.S.S.N. 10/665,793

Filed: September 19, 2003

AMENDMENT AND RESPONSE TO OFFICE ACTION

31. (Previously presented) The strand of claim 1, wherein the strand forms a mesh or lattice.

32. (Previously presented) The strand or seed of claim 9, wherein the radioactive agent is contained within a biodegradable carrier.

33. (Previously presented) The strand of claim 9, wherein the strand comprises seeds and spacers, wherein at least one seed comprises the radioactive agent, and wherein the spacers are attached to one or more ends of the seed.

34. (Currently amended) The strand of claim 9, further comprising spacers, wherein the spacers are elastic.

35. (New) The strand or seed of claim 28, wherein the anchoring structures are formed of a material selected from the group consisting of shape memory polymers and electroactive polymers.